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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,029	01/21/2005	Nobuyoshi Hayashi	051003-0313724	1542
909	7590	09/27/2006	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			VANOY, TIMOTHY C	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	

1754

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/522,029

Applicant(s)

HAYASHI ET AL.

Examiner

Timothy C. Vanoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005 and 21 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>May 10, 2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

- a) Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

*In this application, the abstract is not in the form of a single paragraph.*

- b) The spacing of the lines of the specification is such as to make reading difficult.

New application papers with lines 1½ or double spaced on good quality paper are required.

### ***Claim Objections***

- a) Claim 3 does not consistently use the same terminology as set forth in applicants' claim 2. Applicants' claim 2 mentions an "alkali compound", whereas applicants' claim 3 mentions an "alkaline compound". It is suggested to replace "alkaline compound" with "alkali compound" in claim 3 so that it will be consistent with applicants' claim 2.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) In claim 3, the phrase "when the added quantity is expressed in a mole ratio to an alkaline permanganate of 1 mol" is vague and indefinite because the previous claim language never mentioned the "alkaline permanganate" before.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 412 310 A1 to Ebata et al.

Comparative Example 1 on pg. 4 in the Ebata et al. publication describes a method for preparing what appears to be the same manganese/alkali metal composition comprising the steps of adding manganese sulfate and a solution of potassium hydroxide to an aqueous solution of potassium permanganate and allowing the mixture to react. The resulting precipitate was filtered, washed and dried overnight at 100 °C to produce a manganese-containing compound.

The difference between the applicants' claims and the Ebata et al. publication is the sequence in which the ingredients are added. The applicants' claim 2 calls for adding the alkali compound and permanganate compound to a solution of bivalent manganese salt whereas Comparative Example 1 in the Ebata et al. publication adds

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the alkali compound and bivalent manganese salt to a solution of permanganate, however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made because the courts have already determined that the selection of any order of mixing ingredients is *prima facie* obvious: please note the discussion of the *In re Gibson* 39 F.2d 975, 5 USPQ 230 (CCPA 1930) court decision set forth in section 2144.04(IV)(C) in the MPEP 8<sup>th</sup> Ed. Rev. 3, Aug. 2005.

It is submitted that an obvious variation of the same method for making the manganese compound will inherently produce the same manganese compound with the same alkali metal content and having the same surface area.

Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the English abstract of CN 1354686 A.

The English abstract of CN-686 describes the use of a composition comprising manganese and either an alkali metal or an alkaline earth metal which used for purifying the exhaust gas emitted from diesel or petrol engines to reduce the emission of NO<sub>x</sub>.

The difference between the applicants' claims and CN-686 is that the applicants' claim 1 describes the surface area of composition as being 300 m<sup>2</sup>/g or more (whereas CN-686 does not expressly set forth the surface area), however it would have been obvious to one of ordinary skill in the art at the time the invention was made to maximize the surface area of the composition, as set forth in applicants' claim 1, because of the

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expected advantage of providing more reactive surface area on the composition for reaction with and removal of the environmental pollutants.

Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/61289 to Birchem et al.

The English abstract of the Birchem et al. publication describes the use of a composition comprising manganese and either an alkali metal or an alkaline earth metal which used for purifying the exhaust gas emitted from diesel or petrol engines to reduce the emission of NO<sub>x</sub>.

The difference between the applicants' claims and the English abstract of the Birchem et al. publication is that the applicants' claim 1 describes the surface area of the composition as being 300 m<sup>2</sup>/g or more (whereas the English abstract of the Birchem et al. publication does not expressly set forth the surface area), however it would have been obvious to one of ordinary skill in the art at the time the invention was made to maximize the surface area of the composition, as set forth in applicants' claim 1, because of the expected advantage of providing more reactive surface area on the composition for reaction with and removal of the environmental pollutants.

Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 53-87,972.

The English abstract of JP-972 describes a method for decomposing ozone in a gas by contacting it with an activated carbon supporting manganese oxide and one or

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more of an alkali or alkaline earth metals. Section no. 6 on pg. 2 in the text of JP-972 seems to disclose that the activated carbon supports from 0.1 to 10 percent of the manganese compound and from 0.5 to 5 percent of the alkali metal or alkaline earth metal component. Section no. 9 on pg. 3 in the text of JP-972 seems to disclose that the composition has a surface area of 1,050 m<sup>2</sup>/g.

The difference between the applicants' claims and JP-972 is that the applicants' claim 1 sets forth that the manganese composition contains from 1 to 10 % of the alkaline substance whereas JP-972 appears to disclose that the composition may contain from 0.1 to 10 percent of the manganese composition and from 0.5 to 5 percent of the alkali metal or alkaline earth metal composition, however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made because the courts have already determined that the overlapping portion of a claimed range and a prior art reference's range is *prima facie* obvious: please note the discussion of the *In re Wertheim* 541 F.2d 257, 191 USPQ 90 (CCPA 1976) court decision set forth in section 2144.05(I) in the MPEP 8<sup>th</sup> Ed, Rev. 3, Aug. 2005.

The following references are made of record:

U. S. Patent 6,156,283 disclosing a  $\text{KMn}_8\text{O}_{16}$  composition having a surface area of 122 m<sup>2</sup>/g (please see Example 1 in col. 8), and



U. S. Patent 3,761,570 disclosing a manganese oxide/magnesium oxide composition containing a  $\text{MnO}_2$ :MgO mole ratio of 1:3.5 to 1:4.2 (please see Example 3 in col. 9).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Timothy C Vanoy*  
Timothy C Vanoy  
Primary Examiner  
Art Unit 1754

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tv